

Collecting Lepidoptera in Britain during 1973

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heads were a virtual blank, except for a few *Procus literosa*. We ran the m.v. trap our final night on the flat roof of part of our hotel with good results, recording just over 200 individuals comprising 56 species. Among the visitors were several moths not previously noted. These included *Tethea duplaris* L., *Eilema lurideola* Zinck., a couple of worn *Pelosia muscerda* Hufn., *Amathes sexstrigata* Haworth, *Procus furuncula* Schiff., *Celaena leucostigma* Hübn., *Catocala nupta* L., a very early date. The new geometers were *Orthonama vittata* Borkh., *Eupithecia albipunctata* Haworth, *E. centaureata* Schiff. and *Deuteronomos alniaria* L.

On August 13, yet another scorching day, we travelled via Swaffham and Dereham to Stoke Ferry where in great heat we diligently searched the Meadow Rue (*Thalictrum*) for larvae of *Perizoma sagittata* Fab. but without success. We next stopped for a short time in an open area of the Breck just north of Brandon where a number of butterflies were about, mainly many *Polyommatus icarus* Rott. with a few *Heodes phlaeas* L. and *Eumenis semele* L. We reached Surrey that evening after a most enjoyable few days under ideal conditions.

The remarkable heatwave continued well into the middle of August reaching a maximum on the 16th with quite tropical shade temperature of just 90°F. However, this oppressive atmosphere had given way to more congenial conditions when I motored on the 17th to the Cotswolds to stay with Mr and Mrs Ronald Demuth in their most attractive home at Oakridge near Stroud. The next day, after visiting Mr Austin Richardson at Minchinhampton we crossed the Severn and went on a tour through Tintern and back through the Forest of Dean, but nothing of note was seen nor were any *Cryphia muralis* Forst. to be found on some lichen-covered walls in Gloucester. That evening we placed our m.v. light among a bed of butterbur not far from Nailsworth. But searching at dusk among the leaves failed to produce any *Gortyna petasitis* Doubleday nor were any attracted to light though it was a known locality for this insect. However, among 22 other species at the lights were *Notodonta dromedarius*, *Polia chi* L., *Amathes xanthoarapha* L., *Cosymbia linearia* Hübn., *Ecliptoptera silaceata* Schiff., *Ortholitha chenopodiata* L., *Abraxas grossulariata* L., and several *Deuteronomos fuscantaria* Stephens. There was yet another fine day on August 19 when my hosts motored me to the Malvern Hills and back via Cheltenham, but only a few Pierids were seen en route. The Frampton marshes bordering the Severn were our venue after dark, but it was a disappointing night with only 16 species among which were a few *Hadena suasa* Schiff., also

Leucania impura Hübn., *Hydraecia nictitans* Borkh., *Apatele rumicis* L., *Calothysanis amata* L. and *A. grossulariata* L.

During my three nights stay at Watercombe House my host had run his static trap which attracted at least 1300 moths. Those species of note were *Harpyia furcula* Clerck, *Tholera cespitis* Schiff. female, *Selenia tetralunaria* Hufn., several *Ennomos quercinaria* Hufn., *Deuteronomos erosaria* Schiff., *Anaitis efformata* Guenée, also a few females of *Hepialus sylvina* L. On August 20 I motored to the downs near Westbury, where a good many butterflies were to be seen, including *Lysandra coridon* Poda, already past their best, with a few *Aricia agestis* Schiff., *Polyommatus icarus* Rott., *Pararge megera* L., and some *Eremobia ochroleuca* Schiff on flower heads. I returned to Surrey that evening.

The remarkably warm weather continued almost without a break for the rest of the month, bringing out a spate of the summer butterflies, in particular Red Admirals, Small Tortoiseshells and the common Pierids which flocked to local buddleia bushes in my own garden and in most parts of southern England. I paid another visit to Kent on August 24 with headquarters at Ashford, but only a few *Amphipyra pyramidea* L. came to sugar that night in the Hamstreet woods and the posts at Dungeness proved a blank the next morning. The Orlestone woods were once more the scene of the next night's activities. Quite a number of insects came to our Heath light in spite of fairly cool conditions. Among 20 species were *Drepama binaria* Hufn., *Thyatira batis* L., *Tholera cespitis*, *T. popularis* Fab.

The temperature was well in the 70's on August 26, when I once more visited Mr Michael Tweedie, near Rye, and his garden was again full of Vanessids. That evening I placed my Heath apparatus overlooking some marsh mallow plants in an open field south of Appledore and was surprised when three males of *Gortyna hucherardi* Mab. arrived soon after dark, as I have never known this insect appear before September. The few other species comprised *Apamea testacea* Schiff., and *T. popularis*. The Bank Holiday, on the 27th, was dull and much cooler, but once again there was quite an assortment of insects that evening at the Heath light in the Hamstreet woods, where I was joined by Mr Youden from Dover. *Drepama binaria* put in a further appearance and there were also *Notodonta dromedarius*, *T. popularis*, *Leucania pallens* L., *Cosmia trapezina* L., *Deilinia pusaria* L., and *Mamestra brassicae* L.

Back in Surrey, the Vanessids seemed to have been getting every day more plentiful, with the warmth still prevailing, and September opened with no let-up, especially on the 5th when the shade temperature reached the phenomenal level of 85°F for the time of year. *Eumenis semele* was still flying on Chobham Common the next day in great heat too. The grand spell was still persisting when I accompanied Mr J. Messenger to Portland on September 7, arriving about 4 p.m. in time to

make a survey of some of the open areas there. Quite a number of Chalk-hill Blues were still about, mainly females, together with a few Common Blues and Small Coppers, while the little geometer *Aspitates ochrearia* Rossi was to be flushed freely. But little came to our m.v. lights perched on a cliff, overlooking the Chesil beach. *T. cespitis* and *Epirrhoë galiata* Schiff. were the only insects of interest. The next day, with the thermometer in the low 80's, we ventured to Bexington at the western end of Chesil Bank. Here we were delighted to see *Colias croceus* Fourc. flying over fleabane and later that day in a garden on the outskirts of Bridport, I was amazed to see a huge concourse of Tortoiseshells jostling each other on about 1½ sq. ft. surface of the flower heads of *Sedum spectabile*. On approaching I counted no less than 75, with nine Red Admirals, the biggest assemblage of these butterflies I have ever seen. Large numbers of Silver-Y's were about everywhere as well. The 9th was an equally warm day with Red Admirals galore in the grounds of Pennsylvania Castle Hotel. The undercliff on the eastern side of Portland was the scene of our nocturnal operations. The chief feature was a huge flight of *Plusia gamma* L. of which at least a hundred arrived on our sheet soon after dark with a number of *Caradrina ambigua* Schiff., and a few *Leucania l-album* L., with *Scopula promutata* Guenée, *E. galiata* and *Lyncometra ocellata* among ten other species I noted. Back at the hotel our static trap was alive with insects. As it turned out, there were some 350 visitors, among which we counted 270 *P. gamma*. We heard later that another collector working on Portland that night had over a thousand of this migrant at his lights, thus giving evidence of a huge invasion. The four nights we ran our trap produced just short of 600 moths. The coastal specialities were already well out at this date, such as *Eumichtis lichenea* Hübn., with *Leucochlaena hispida* Geyer in plenty and an occasional *Aporophyla australis* Boisd. Other migrants were *Agrotis ypsilon* Hufn. and *Peridroma porphyrea* Schiff. Among the more interesting geometers we recorded were several *E. quercinaria*, with a female which eventually laid well. Other species included *T. cespitis*, *S. promutata*, *Gnophos obscurata* Schiff., and several *Hepialus sylvina*.

Our final day on September 10, we spent touring the region between Portland and Swanage, in the vicinity also of Corfe Castle and Lulworth Cove, but overcast conditions prevented any active collecting. The Vanessids were in force in the New Forest, mainly on buddleia on the 11th, when we were en route back to Surrey, where *A. urticae* was now abundant.

The wonderful spell continued till the middle of the month with 79°F on the 15th, but not much was moving in the Durfold Woods the next day and it was distinctly cooler when I stayed with my relations at Blandford on September 21, where as usual the Tortoiseshells were about in all the gardens. We went over to Portland again on the 23rd where the sun was still shining and the Red Admirals still in plenty. A static m.v.

trap in my relatives' garden that night provided 160 insects. By far the most numerous was *Omphaloscelis lunosa* Haworth in its many forms. Other species on this mild night included *Aporophyla nigra* Haworth, *Tiliacea citrargo* L., *Caradrina clavipalpis* Scop., *Gortyna micacea* Esp., *Atethmia xerampelina* Esp., many *Leucania pallens* L., also *Deuteronomos erosaria* Schiff. and *D. fuscantaria* Stephens. Several Commas were disporting themselves on the michaelmas daisies on the 24th in the garden of Mr C. Dixon, whom I visited on the way home and Red Admirals, Small Tortoiseshells and Small Whites were still much in evidence in that vicinity.

On September 25, I travelled by train to Thorpe-le-Soken, where I stayed once more with Mr and Mrs B. Fisher at their home in that neighbourhood. Fortunately conditions were far more favourable than on my visit just a year previously. We started our operations well after dark, about 8.30 p.m., placing a big m.v. light on a bank overlooking a large growth of *Peucedanum officinale* which produced nothing at dusk. However, we had a great thrill at 9 o'clock when a very large and perfect male *Gortyna borelii* Mab. suddenly alighted on our sheet with another equally good example just an hour later, but no more after that. Other moths at the lights included several very big female *Rhizedra lutosa* Hübn., with *Triphaena comes* Hübn., *Amathes c-nigrum* L., *A. lunosa*, *G. micacea*, *L. pallens* and *Dystroma truncata* Hufn. We returned to my host's home just before midnight when he started up his static trap. The next morning we were surprised to find another grand specimen of this spectacular insect, *G. borelii* on the side of his trap, though we were well over a mile from the site of its foodplant. There was a great concourse of the commoner species, most notably some 200 of *Agrochola lychnidis* Schiff. in most of its forms, with a good sprinkling of *Anchoscelis litura* L., and most of the common insects seen earlier that night on the marshes. I returned to London later that day, well pleased with my brief visit to that part of Essex.

The Small Tortoiseshells and Red Admirals were still in plenty on the michaelmas daisies during the last days of September and well into October. On the 2nd there were quite a number flying in woods near Chiddingfold with *Polygonia c-album* and *Pieris napi* L. Temperatures were well in the 60's during the first half of October. But there was a noticeable decline in insects during the latter part which was much cooler in spite of considerable sunshine. I paid my final visit to Kent on October 20, but nothing was on the wing in the Hamstreet area the following day. Red Admirals were still flying the first days of November which was on the whole very sunny and mild for the first three weeks, but there was a general falling off of insects at light, though some collectors had a spate of *Ptilophora plumigera* Schiff. in the early part of the month, while there was a big emergence of *Poecilocampa populi* L. during the first half of December.

In conclusion the year 1973 was indeed a most memorable

one, not only for one of the best summers this century but also, in consequence, for the profusion of many butterflies, in particular the Small Tortoiseshells, Red Admirals, Peacocks and the Chalk-hill Blue in many districts. By far the most spectacular event among the moths, was the great immigration of the Bedstraw Hawk (*Hyles galii* Rott.) which compared well with its major years of 1870, 1888 and 1955. Other migrant species too were well up to average and there was a good reappearance of *Colias croceus*, chiefly in the south-western region.

A Review of Indian Phytoseiid Mites with a Note on their Zoogeography

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Considerable attention has been focussed on the mites of the family Phytoseiidae because of their immense importance as predators and, thus, for their possible utilisation for the natural control of pest species of mites particularly of the families Tetranychidae and Eriophyidae.

The information available on phytoseiid mites in India is scanty in comparison to work done abroad. Narayanan and Khot (1959) were first in India to bring into light the importance of phytoseiid mites as biocontrolling agent when they recorded *Amblyseius cucumeris* (Oudemans) feeding on *Oligonychus mangiferus* on mango. Next year Narayanan and Kaur (1960) described for the first time two new species of the genus *Amblyseius* Berlese. In the same year Narayanan and Kaur (1960a) and Narayanan *et al.* (1960) discussed in detail the important taxonomic characters of the family Phytoseiidae. They emphasized that the number, arrangement, nature, position and relative lengths of setae together with some other anatomical characters are important in the taxonomy of this group. Narayanan *et al.* (1960) also reported 8 species including 3 new ones. Chant (1960) described 4 new species of *Typhlodromus* Scheuten and *Amblyseius* Berlese. Narayanan & Ghai (1963), while investigating into the causes of mango malformation, found some mites associated with this disease. Three of them belonged to the family Phytoseiidae including a new one under *Typhlodromus*. Krantz and Khot (1962) described a species of *Hemipteroseius* Evans. Ghai (1964), while reviewing the work done on mites of economic importance in India, listed 17 species of Phytoseiidae. Ghai and Menon (1967) reported 16 species of *Amblyseius* Berlese including 7 new ones and provided a key for the first time for the Indian *Amblyseius* species.

From the material received from India and Pakistan, Muma (1967) reported 15 species including 8 new ones under the genera *Amblyseius* Berlese, *Typhlodromips* De Leon, *Amblydromella* Muma, *Cydnodromus* Muma and *Cydnoseius*